Integrated Urban Forest Assessments + "Progress Summit"

November 16, 2010

Cascade Land Conservancy
King County
USDA Forest Service
University of Washington
EarthCorps
City of Seattle
International Forestry Consultants, Inc.
Institute for Culture & Ecology
Oregon State University

Green Cities Research Alliance

Partnering for sustainable cities through science, policy, and citizen action

USDA Forest Service
Pacific NW Research Station

UW Remote Sensing & Geospatial Lab

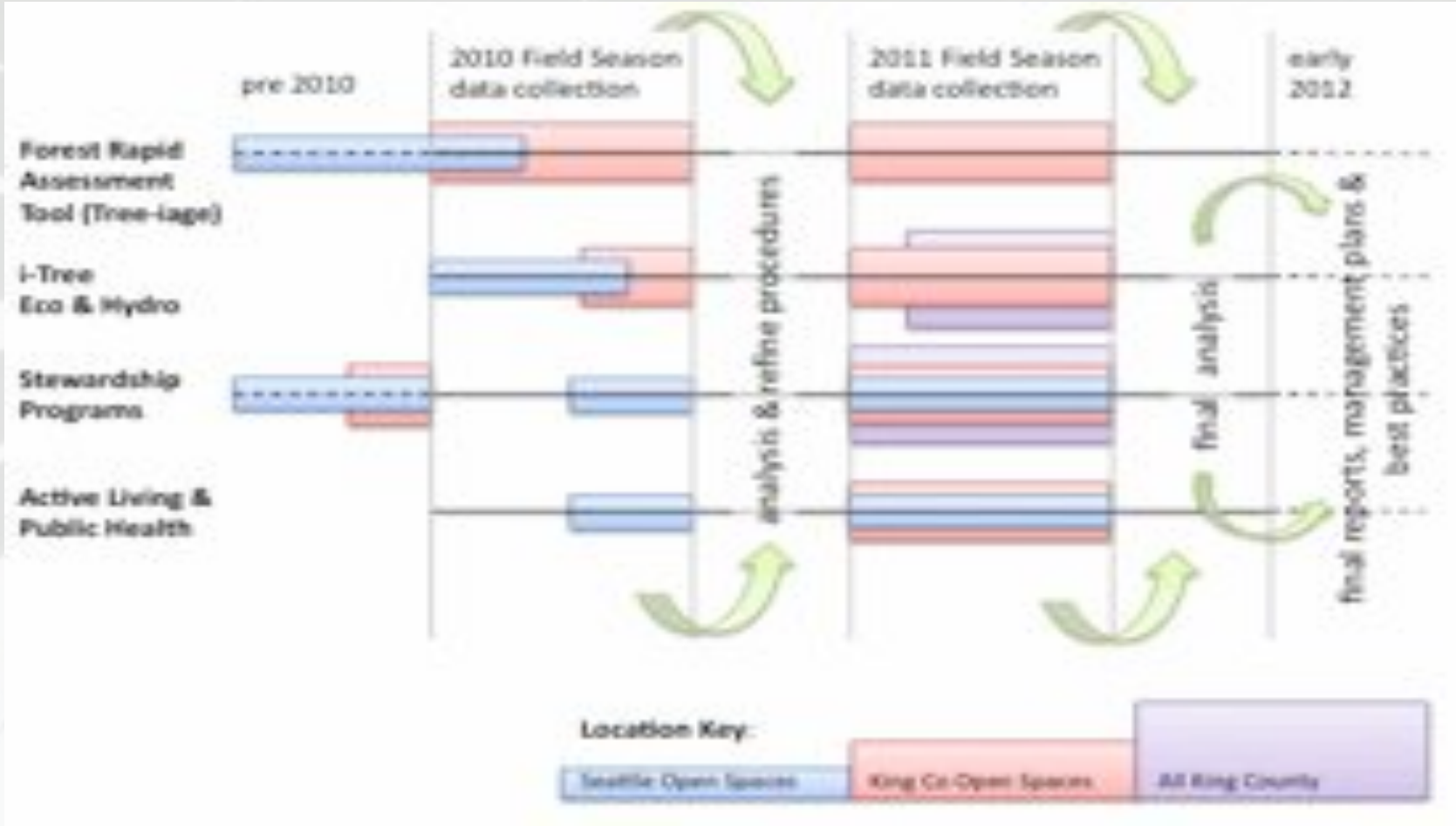
University of Washington

Parks & Recreation Division

City of Seattle

Integrated Urban Forest Assessments +

Integrated Urban Forest Assessments + June 2010 :: Study Plan



Progress Reports

- IUFA:
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  - 10:25 - 10:40: Forest Landscape Assessment
  - 10:40 - 10:55: Stewardship Engagement
  - 10:55 - 11:10: Public Health
  - 11:10 - 11:25: UW Geospatial
- Related:
  - 11:25 - 11:35: Urban Gathering/Foraging
  - 11:40 - 11:50: Residential Choice
  - 11:50 - 12:00: USFS – FIA, Restoration Economics

FOREST ECOSYSTEM VALUES

Green Cities Research Alliance
Integrated Urban Forest Assessment
Project Summit

FEV PROJECT COMPONENTS

FIELD DATA COLLECTION using i-Tree ECO

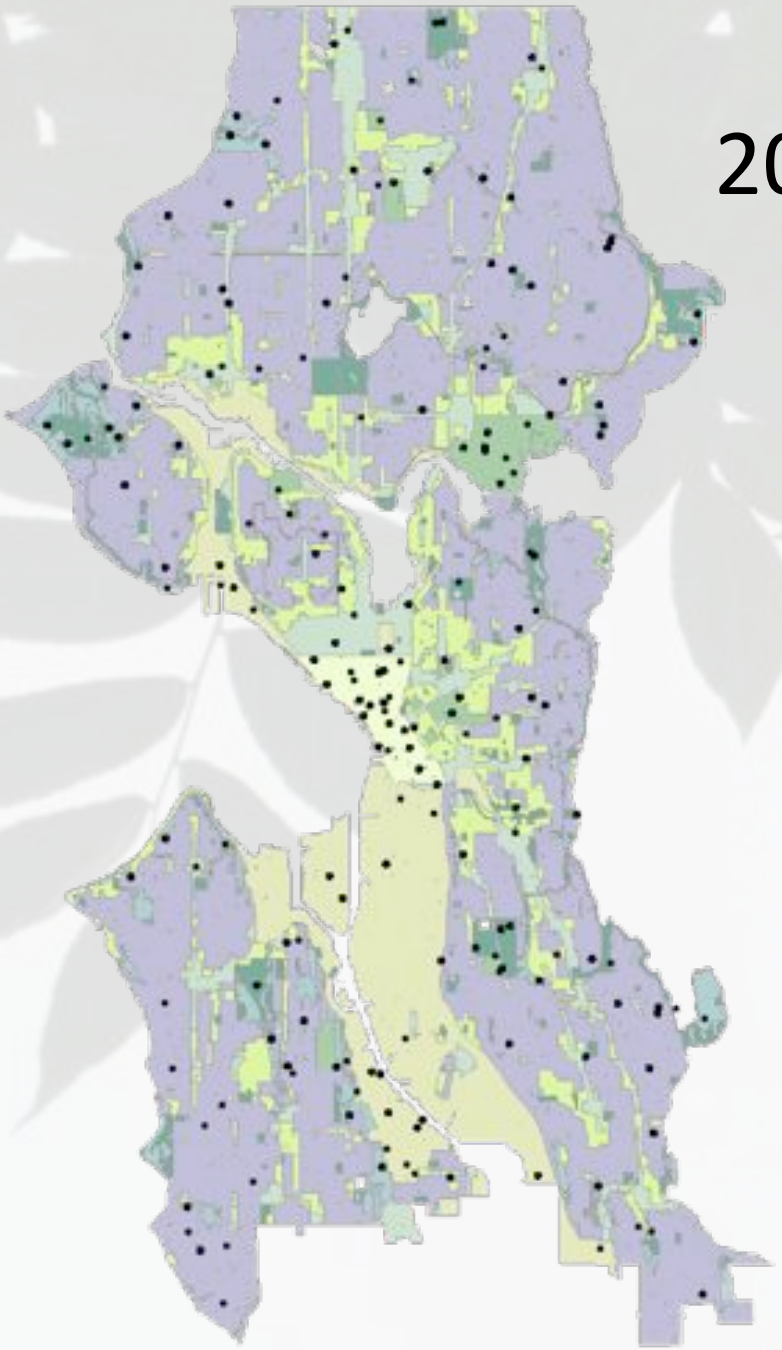
- Data for City of Seattle and King County
- Analysis and reporting
- Establish permanent plots

IMPROVING TOOLS

- PNW calibration
- i-Tree Eco manual and protocol improvements
- Private property outreach documentation

CONNECTING TOOLS

- Tree-iage
- Stewardship and/or public health
- Other forms of assessment



2010 COMPLETED PLOTS

Commercial/Mixed Use	19
Developed Park or Boulevard	20
Downtown	19
Major Institutions	20
Manufacturing/Industrial	19
Multi-family Residential	0
Natural Area Parks	20
Single-family Residential	68
2010 Completed Plots	185

PRIVATE PROPERTY OUTREACH

Total parcels in completed plots	204
"yes" properties	132
"clear" properties	72
Overall parcels contacted	704
"yes" properties	212
"no" properties	30

FIELD DATA COLLECTION


Magnusen Park

MEASUREMENTS

- tree cover
- land use
- ground cover
- tree species
- tree DBH, height, crown width, % dieback, % missing, light exposure
- tree orientation and setback from residential buildings
- plot reference data

RESULTS

1,540 total trees

3,348 DBH measured

- unique species

45 plots without trees

31 total street trees

8.3 average trees/ plot

- most trees/plot

ACRU most common sp.


north


east


south


west

MOVING FORWARD …

- Seattle – final field data collection plan
- King County – dreams, considerations, sampling plan
- Calibration – goal, process, products
- Tree-iage – overlaps, process

PRODUCTS …

- Seattle project update/report
- King County 2011 work proposal
- Seattle project report draft
- i-Tree feedback draft
- Calibration project outline
- Private property outreach report

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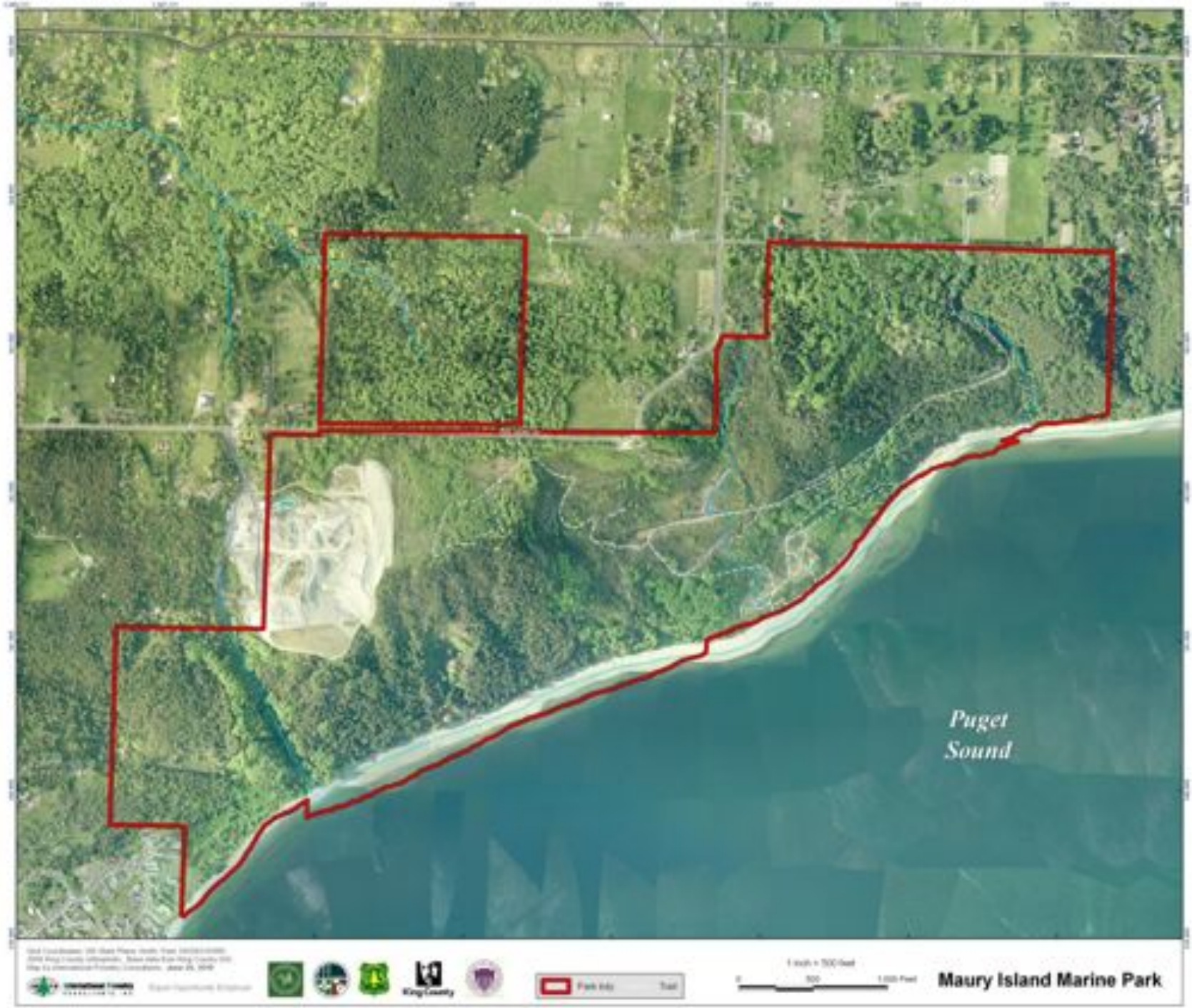
Forest Landscape Assessment Tool
King County Parks and Natural Resources

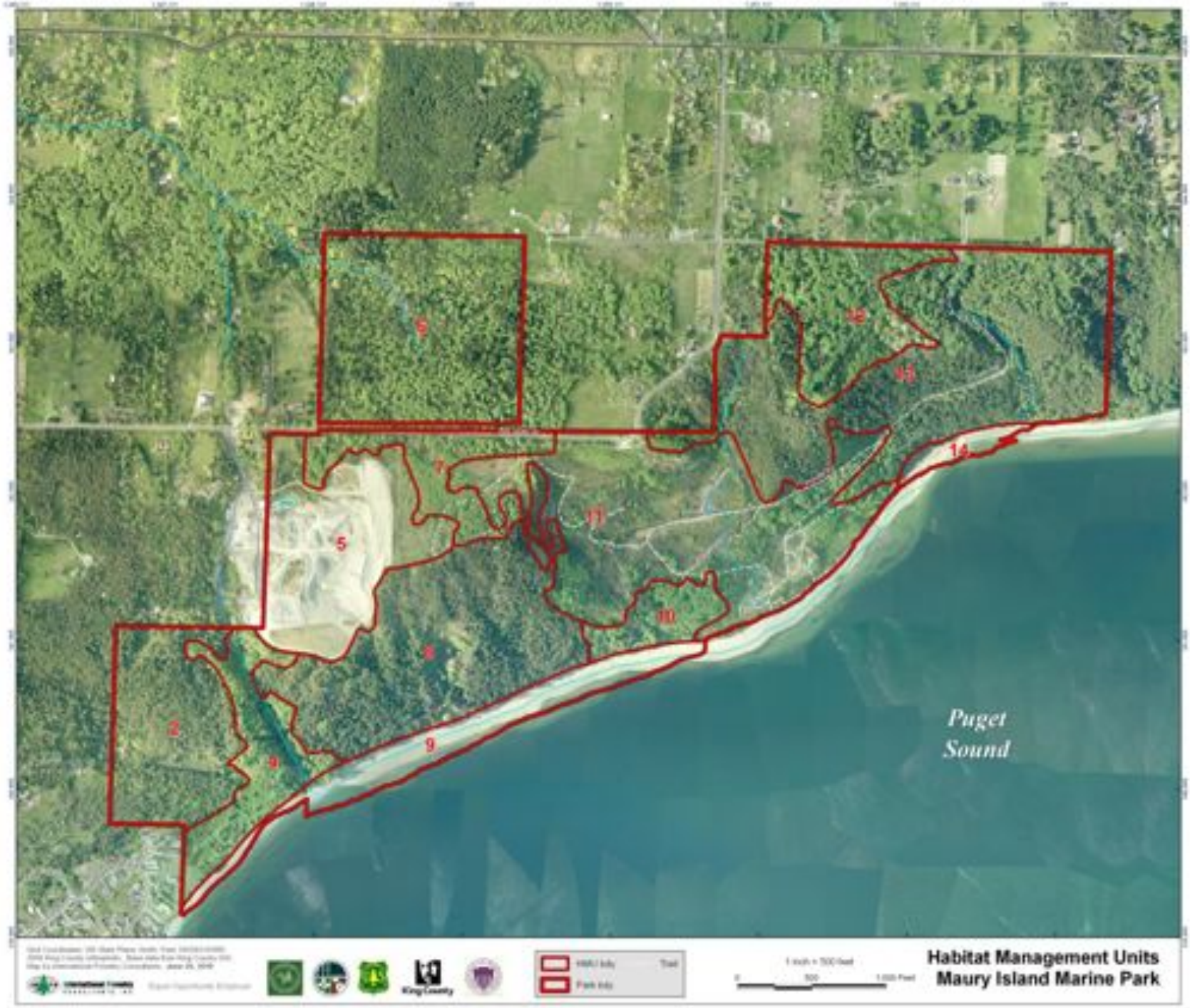
- King County manages 21,850 acres of open space forest lands
- 2010
- Working with INFO, develop and field test forest assessment protocols and procedures
- INFO completes forest assessment on 12 of the largest sites totaling 9,800 acres
- Initiate KC Parks staff orientation and training for 2011
- 2011
- Complete FLAT training manual for staff and volunteers
- KC Parks staff will complete forest assessment of over 100 sites totaling 12,050 acres

Grand Ridge Park

Taylor Mountain Forest

FLAT Training on October 6, 2010 at McGarvey Park


Puget
Sound
Park Info
Trail
Maury Island Marine Park


6
12
13
14
7
11
5
10
4
2
3
9
Puget
Sound
Habitat Management Units
Maury Island Marine Park

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Stewardship Capacity and Operations

- Goals
- To understand volunteer experiences so that volunteer programs can more effectively engage citizens.

- To understand organizational capacity and operations so that formal stewardship programs can optimize achievement of their goals and purposes.

- Increase realization and public acknowledgement of stewardship benefits; ecological, social, and financial.

Products

- Volunteer Engagement Best Practices

- Standardized Volunteer Registry

- Communications and Science/ Conceptual Releases

GCRA, IUFA

Activities

- <u>Completed:</u>
- Literature Review
- Key Informant Interviews

<u>Current:</u>

- Review of Volunteer Data Records and Policies
- Volunteer Engagement Questionnaire, Seattle

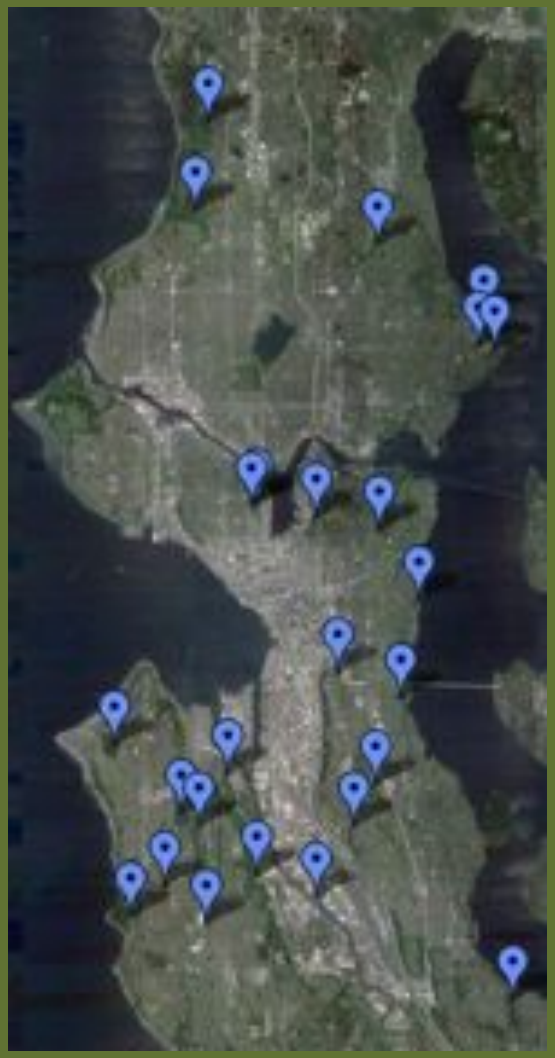
<u>Planned:</u>

- Review of Volunteer Data Records and Policies, cont.
- Volunteer Engagement Assessments, King Co.
- Volunteer Registry Construction
- Data Analysis, Mapping
- Product Construction


Steward Questionnaire

Volunteer Questionnaire, 2010

- Population: All 151 organized environmental stewardship events on forested Seattle Parks' lands in Oct and Nov 2010. Est. 2,400 individuals
- Surveyed: Selected 35 events to survey ~300 people. Actually, due to cancelations and other considerations, 31 events ~200 people. To date, 24 events ~125 people
- Survey Contents:
- Event Characteristics
- Volunteer Characteristics, Demography and Volunteer History
- Motivations
- Skills and Contributions
- Satisfactions
- Personal Health and Attitude Outcomes



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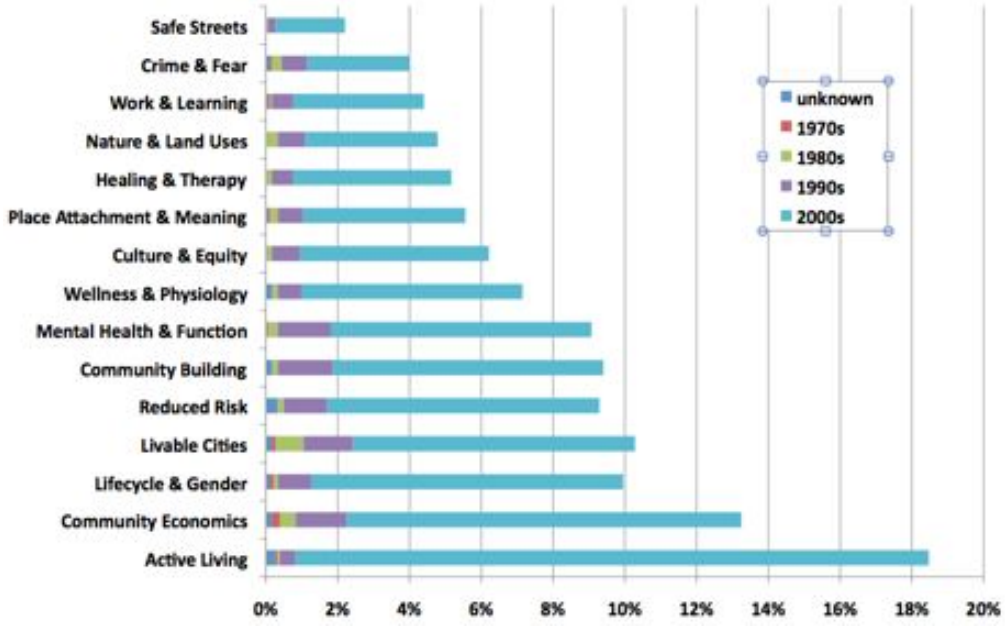
Human Health & Well-Being Benefits

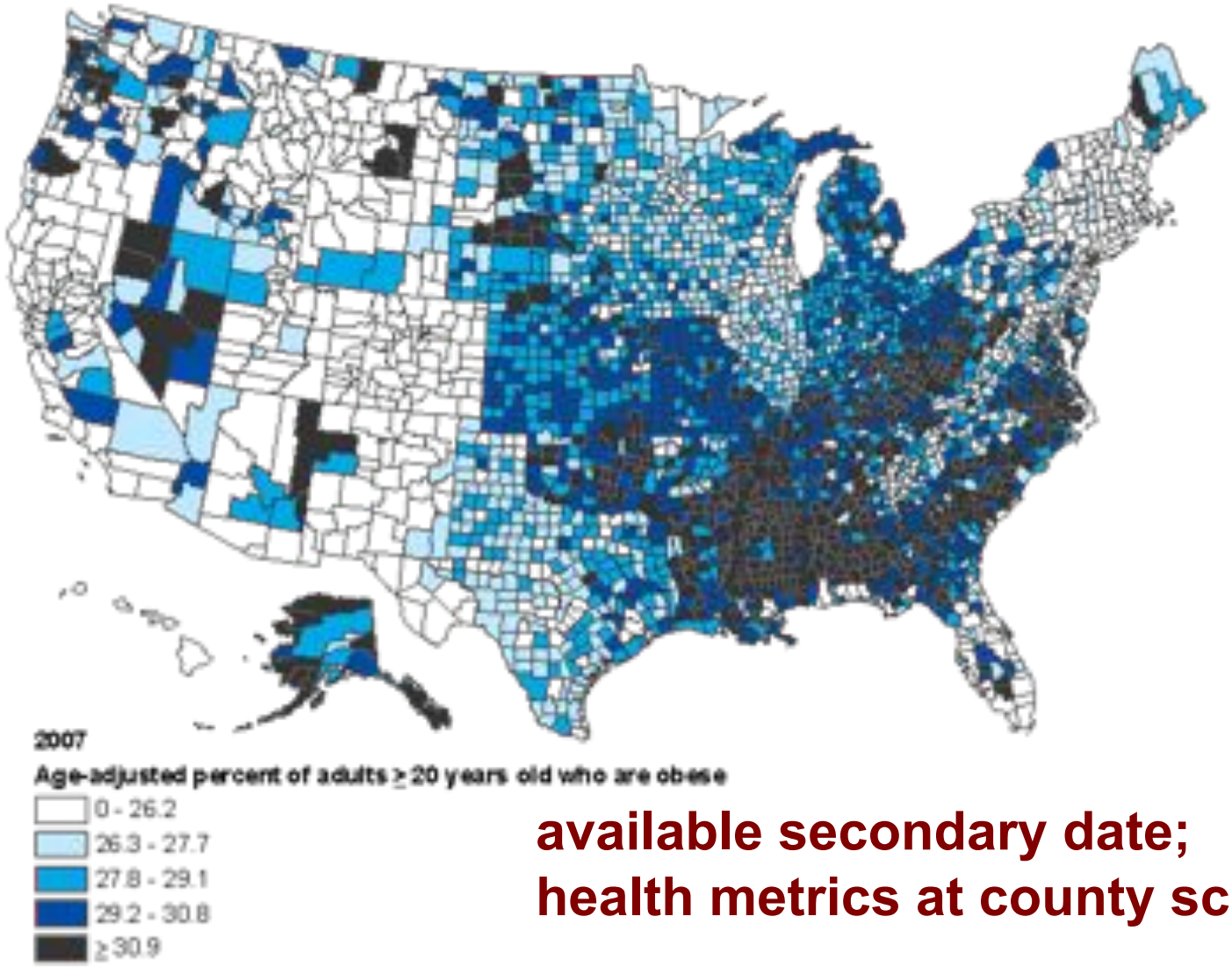
web resource



1,584 articles

benefit x natural resource

Age-adjusted % of adults aged ≥20 years who are obese, 2007



available secondary date;
health metrics at county scale

CDC's Division of Diabetes Translation. National Diabetes Surveillance System available at http://www.cdc.gov/diabetes/statistics MMWR 58:1259-1263, 2009

health issues or benefits measures X geospatial "signature" (OBIA)

available secondary date; 1 m to 30 m scale

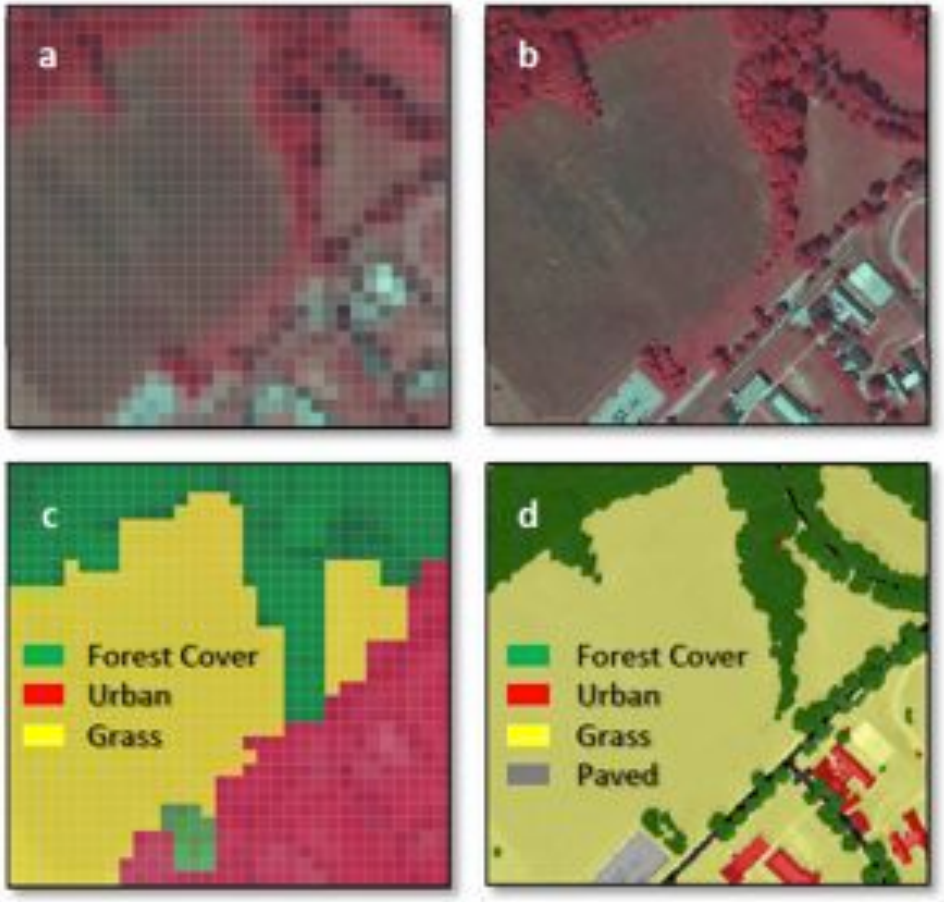


Figure 1. Comparison between a Landsat 30m pixel resolution image (a) classified using per-pixel method (c), and a National Agricultural Imagery Program (NAIP) 1m pixel resolution image (b) classified using Object Based Image Analysis method (d). Note the higher image detail in the OBIA classification and the greater number of classes possible.

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UW Remote Sensing & Geospatial Analysis Laboratory

A. Land Use Land Cover Pilot Projects
- Seattle (98118 zipcode - 'the most diverse in the U.S.')
- Olympia (urbanization transect from DT Olympia to Evergreen Campus)

B. Forest Health Rx: Geospatial Rapid Forest Health Assessment in Heterogeneous Forests ($42,929)
- $10,000 of total spent on hyperspectral data collection for Arboretum
- $8,000 (USFS PNW) spent on hyperspectral for Seattle Pilot Study Area
- Remaining $ spent on hyperspectral data analysis

C. Tacoma Canopy Cover Assessment ($29,888) - Workshop for Municipalities

D. Geospatial Relationships of Urban Forest Conditions, Stewardship Activity and Environmental Equity (in review) - preliminary data collection stage

E. Association of American Geographers Meeting in Seattle, April 12-16, 2011
- RSGAL organized 9 sessions, including panel session on Urban Forestry, Ecology, & Natural Resources

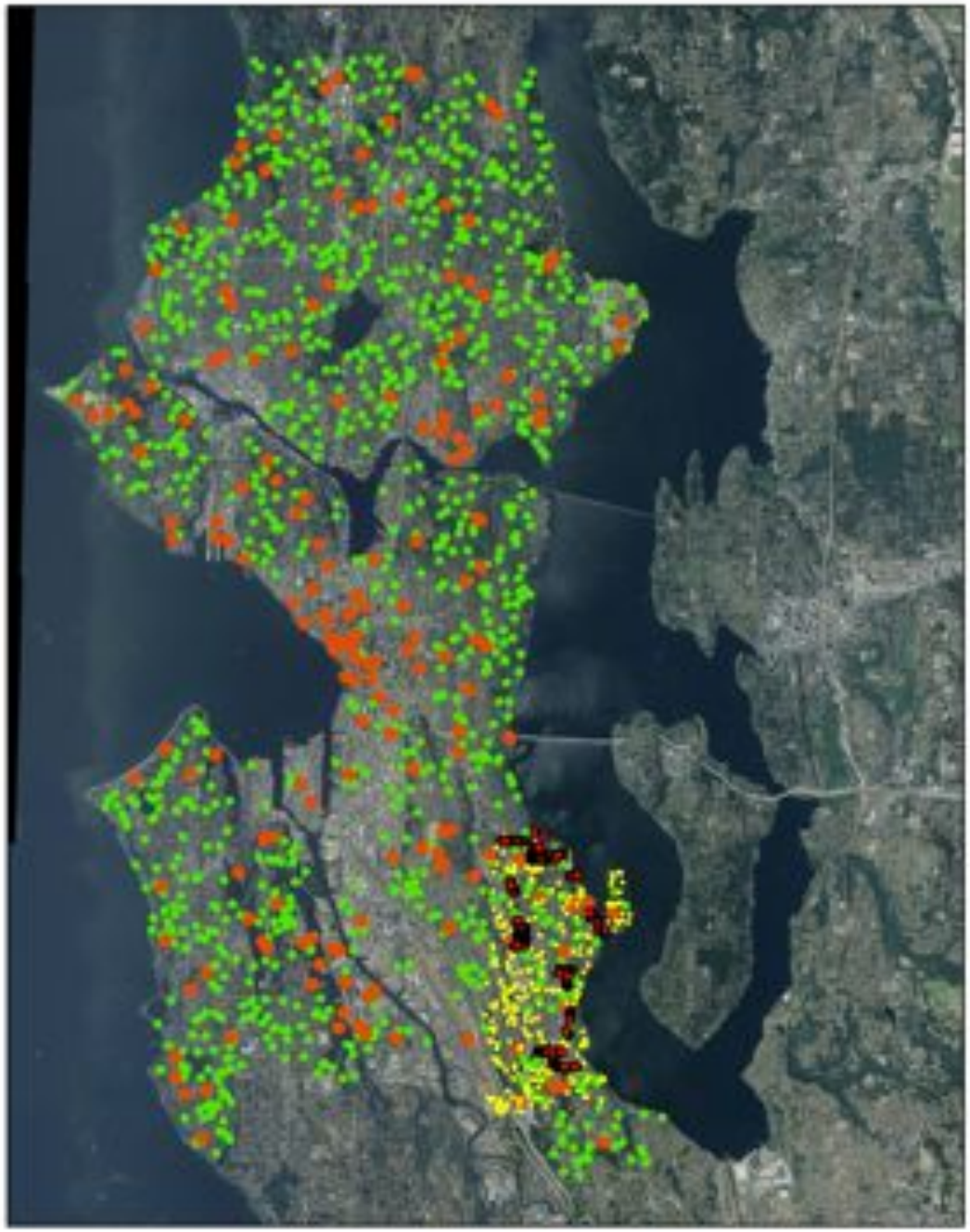
F. Other GCRA Team Collaborations

UW Remote Sensing & Geospatial Analysis Laboratory

A. Manuscripts:
   - Seattle GEOBIA
   - Olympia GEOBIA + LiDAR
   - Urban Ecosystem Services:
     - Review of Remote Sensing Methods
     - Applied Urban Landscape Ecology
   - Landsat GEOBIA Temporal (comparative research opportunity and collaboration with Luke Marzen's Lab, Auburn University)
   - GEOBIA, Citizen Science, and Public Domain Data
   - Others ? (using these datasets)

- Grant Opportunities:
   - UW Royalties Spring 2011 (if Fall 2010 not funded)
   - NASA ROSES - 2010 and 2011
   - NSF CAREER – 2011 (Moskal only but will have an urban forest theme)
   - NSF Geography and Spatial Sciences - 2011
   - NSF Coupled Human and Natural Systems - 2011

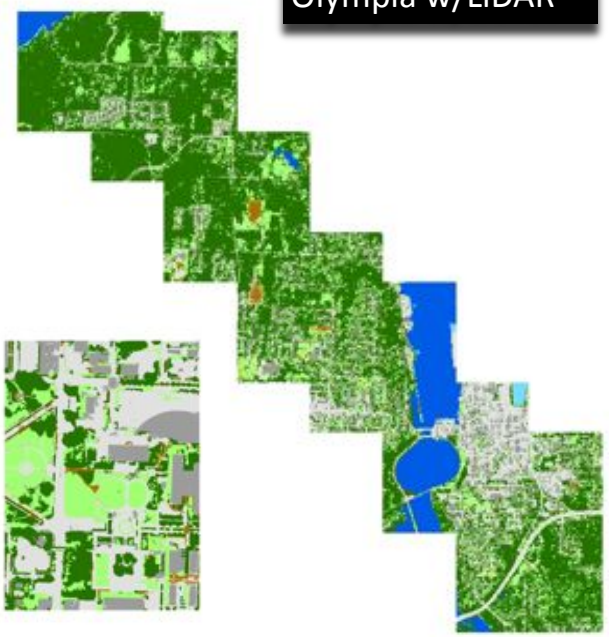
Sampling Points



Seward Park (2009)

Discovery Park (2009)

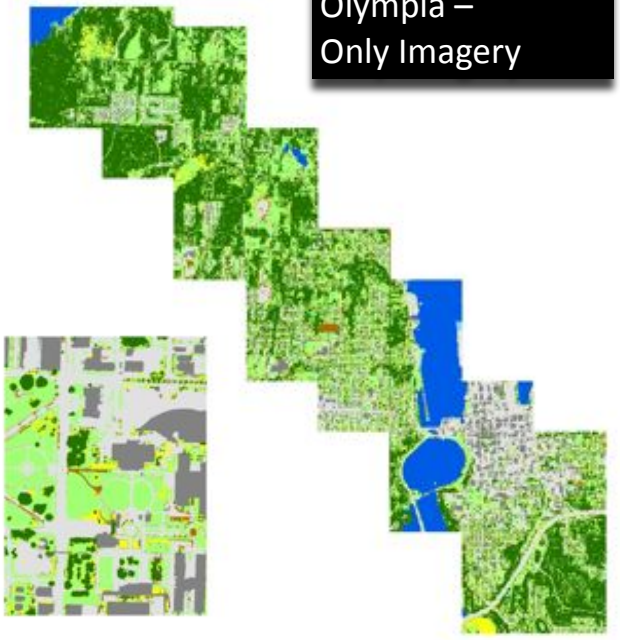
Olympia w/LiDAR



Seward Park (2002)

Discovery Park (2002)

Olympia –
Only Imagery



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NTFP Foraging and Stewardship in Urban Ecosystems of Seattle




Overview

Using qualitative and geospatial information, we seek to better understand the sociocultural, spatial and institutional characteristics of plant and fungi gathering in urban ecosystems. Social science findings from the Urban Gathering study may expand urban ecosystem planning and management, integrating local environmental knowledge and diverse ways of interacting with urban nature.

GREEN CITIES RESEARCH ALLIANCE

PNW

Institute for Culture and Ecology

Contact: Melissa Poe (Co-PI)
mpoe@ifcae.org



Research Progress

Schedule of Activities

Phase I	Design & Initiate Research Program	complete
Phase II	Qualitative Fieldwork	Underway [Mar '10 - Oct '11]
Phase III	Analysis & Reporting	Scheduled [Jan '11 – Nov '11]
Phase IV	Technology Transfer & Applications	Scheduled [May '11 – Dec '11]

Field Work Highlights:

- Identified over 200 urban foragers
- Interviewed 58 foragers, target = 75
- Interviews with "managers", target = 25
- 70 events: meetings, work parties, forays, plant walks, lectures

Reporting:

- Preliminary reports: National Geographic Green Guide; Urban Farm Hub
- Reporting out to Foragers: May '11
- SfAA Conference: Mar '11 (4 papers on foraging practices, place-making, perceptions of plant ecologies, & social justice)



Next Steps

- Applications: Linking research with planning; implementing policy suggestions; NTFP artisan exhibit
- New research directions:
  - Pilot project on integrating foraging/gathering into local food systems and forest management within publically-managed landscapes across urban-rural continuum
  - Ecological effects of dispersed and intensive foraging across 'functional groups' of plants
  - Comparative urban ethnoecologies: assessing diverse local knowledge in urban nature
- Potential Partners: Green Cities Research Alliance, PNW Research Station, Seattle Parks and Recreation?, King County Parks and Recreation? Others?
- Funding: seeking National Science Foundation programs; AAA A&E; others?

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Residential Location Choices along the Suburban to Rural Gradient: Exploring the Role of Nature and the Outdoors

PNW Leads: Lee Cerveny and Jeff Kline

Investigator: Jenna Tilt, Oregon State University

Partners: King County Parks and Recreation

Primary Objectives

1. Develop a typology of residential developments along the suburban to rural gradient (suburbs, exurbs, rural)
2. Examine resident motives for locating in communities along the suburban to rural gradient and their satisfaction with community life
3. Explore environmental attitudes, outdoor behaviors and stewardship practices among residents along the suburban to rural gradient
4. Collaborate with public, private, and non-profit agencies and land owners

Study Approaches

- Research Phases
- Secondary Data Analysis
  - Development patterns
  - Typology
- Focus Groups (6-9)
  - Identify choice factors
  - Community satisfaction
  - Activities mapping
- Household Survey
  - Assess choice factors
  - Community satisfaction
  - Environmental behaviors
  - Trade-offs

Swaths (or "Swatches")

First and Next Steps

- Year 1 (FY10)
- Study plan
- Conceptual model and literature review
- Sampling design
- Focus group guide
- Survey development
- Collaboration

Year 2 (FY11)

- Submit packet to OMB
- Secondary analysis
- Key informant interviews
- Focus groups (summer)
- Collaboration

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Integrated Urban Forest Assessments + Next Steps . . . .

Today

- Lunch!
- Back at 1:00
- Discussion of next steps
- Work group breakout
- Closing discussion @ 3:30

Year to Come . . .

- Work plan adjustments
- Continue good work
- Products
  - management
  - science (e.g. USFS GTR)
- Funding
- Additional partners?

Projects

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